TAG Meeting Minutes

US Army Corps of Engineers ®
Portland District

Date:	14 July 2020, 1:00 pm to 3:00 pm, Teleconference
Project:	Bradford Island
Subject:	Technical Advisory Group Meeting Minutes
Prepared By:	USACE

AGENCY	ATTENDEES
USACE	Chris Budai, Dan Carlson, Kristen Kerns, Bill Gardiner, Katie Richwine, Alison Suess, Craig Johnson, Ida Royer
Oregon Dept. of Environmental Quality (DEQ)	Bob Schwarz, Mike Poulsen, Jennifer Peterson
Yakama Nation Fisheries (YNF)	Bob Dexter
Sky Environ?	Sherrie Duncan (on behalf of YNF)
Ridolfi	Bill Beckley (on behalf of YNF)
WA Department of Ecology	Andy Smith
Bonneville Power Admin. (BPA)	(not represented)
US Fish and Wildlife Service (USFWS)	Jeremy Buck
Nez Perce	Marissa Merker
Confederated Tribes of the Umatilla Indian Reservation	(not represented)
Oregon Health Authority	Todd Hudson
USEPA	Sean Sheldrake
United States Geological Survey (USGS)	Toby Kock

1) Passive Sampling Update
    a. Kristen Kerns: The majority of the TAG members wanted to see all 209 congeners for the subset of 10 samplers so we will do a contract MOD to do the full suite. At the same time Danny Reible at Texas Tech University will be running the 140-ish congeners on the same subset of 10 samplers and we can compare results. This will take a little bit of time to complete.
2) Bass / Crayfish & Clams QAPPs
    a. Kristen K. – We don't anticipate making decisions today but only to discuss comments.
    b. Bill G. – Two main topics for discussion are the number of samples to be collected from the forebay area, and if we use the reference area, where it's location will be.

    (Kristen K. presented Jeremy Buck's slides related to the Reference Area)

    c. Jeremy – Since about 2006, there has been bass collected at various locations – Bradford Island, the forebay, and the reference area by Cascade Locks. We've been trying to see if the reference area is a good place to show background or if it may be influenced by nearby contaminant sources, or if there are better options nearby. I've been looking into the data.

Not all data is exactly comparable but it's close; some data is Aroclors and more recently it's been congeners. There is also the value of looking at the Reference Area for evaluating issues.

d. Bill G. – In the past we've used the currently proposed Reference Area for comparison to the forebay. There are some PCBs and there are some other COCs such as mercury and pesticides. With this new round of sampling, there has been question about whether data from the past or new data might indicate it's not a suitable reference area. And a question is should we try to move the reference area, or use some other kind of approach.
e. Jeremy – In the 1st slide are all the samples I'm aware of for smallmouth bass, in box plots. There are 3 points to the right of the graph (2 asterisks, 1 circle); the one hitting the 407 number, to me that bass found a source of PCBs somewhere near the cascade locks. If you want a background sample, you want an average, more ambient concentration. I considered that an outlier. The other points (asterisks points) may also be outliers, but they could be argued.
f. Jeremy - In the 2nd slide is the data in the forebay around Bradford Island. Some data in the past included all the Bradford Island points mixed in with the forebay points, without being separated out. I'm not sure if they were included in one decision unit. The forebay bass had much lower concentrations, to me they were a different population than the Bradford Island bass. When you take out the Bradford Island samples, you get a different picture, where it more resembles the reference area concentrations.
    i. Bill G. – The only thing that have been excluded in this slide is fish from Goose Island, is that correct?
    ii. Jeremy – Yes, I took out some Goose Island bass. They were much higher values than what I thought represented the forebay.
    iii. Bill G. – So there are some Goose Island samples in your distribution, just some higher value ones that were pulled out?
        1. Jeremy – That's correct. I tried to make it most comparable. Many fish even around Goose Island are showing concentrations more in line with the Reference Area.
g. Jeremy - In the 3rd slide is the reference area versus forebay bass, which show similar values. If there is an agreement on a value that can be considered more of a source than an ambient background then we can get samples from the forebay for background instead of using the reference area. If we do get higher hits of contamination in the forebay, that would cause some problems.
h. Jeremy - In the 4th slide are quantile plots. This shows data that excludes certain data points and it would have to be discussed if it's appropriate to exclude those points. Some data I've observed puts whole body fish in the reference Area at 50-100 (ug/kg). If you go with a reference area action level as a decision point (50-100 range), do we need a reference area for fish or can we just use that range of values for making decisions for the site? Are there other reasons for having a reference area?
i. Bill G. – We've seen some of those same trends. We have these groups of fish in 2006 and 2011 with very high levels in the forebay. Then in 2006 we have a smaller group of about 4 fish with lower concentrations. Then in 2011 we had some very high fish and the rest were in the lower range. We also have some mid-range concentration fish in the forebay and reference area. There seems to be different tiers of grouping for fish concentrations. Fish over 1,000 are few and seem to be outliers. The ones in the 100's we haven't come to a conclusion on them yet and implications for where the fish came from. The tagging will hopefully help with this. I think it's interesting the forebay can be looked at as a separate

population. In the past we haven't looked at it this way because the bass move around. I think this is helpful. The eventual use of this data is to go into a revised human health risk assessment and ecological risk assessment. At that point we'll develop a threshold concentration that follows the CERCLA process. Part of that is to reach into a broader data set to devise a threshold concentration.

j. Sean – I want to point out that I don't personally think it matters if Cascade Locks get used or a subset from the forebay, but I think if we were to use the reference area we'd have to call certain fish outliers. I don't think Smallmouth bass are a great nature and extent tool. It will be difficult to cross reference anecdotes to why a particular fish came back super hot. Some fish don't move far and some move very far.
k. Jennifer – Bill mentioned a revised risk assessment, I was under the impression that this was a refinement of what was already identified as a risk. If we go forward in collecting new data for a COC list, I think we have to make sure to circle back and make sure we are analyzing for all COCs. I think agreeing on those objectives is important. A revised risk assessment is different than refinement of risk that was already identified.
l. Sean – I agree with that Jen. It was unclear to me whether we were looking for nature and extent from certain species or from a certain risk component. How the data gets lumped together will be important depending on the objectives.
m. Jeremy – In regards to the DQOs, to me it puts this study in step 3 of the DQOs as still identifying input data.
n. Jennifer – I think this discussion should build from what has already been documented. We should say why we're doing this study and here are the DQOs associated with it.
o. Bill G. – Maybe I misspoke. I think we want to look at this from a human health perspective, what concentrations are out there and the risk now, compared to 10 years ago. It's a refinement of the risk assessment. We're not trying to remove COCs. It should inform the actions we'll take.
p. Kristen K. – I agree that it's a refinement. We need the updated data. The initial SPME study used an ROV which showed there isn't sediment, atypical for sediment site. So without sediment, passive sampling will hopefully inform potential sources. And this fish sampling is part of refining our CSM. I get anxious about determining an action level, because bass are just one data point and there are more factors to consider. We will have multiple lines of evidence. And there is still the risk assessments that shows there is unacceptable risk for tribal receptors via seafood consumption. If concentrations are floating in the 100's range, maybe we don't have that primary/NAPL source that has been hypothesized.
q. Jeremy – One thing about the action level is that the action doesn't have to be for cleanup. It can be used for characterization, to be able to say we might need more sampling for an area. The action level can also be based on a combination of tissue and passive sampling data. The human health action level will already be below background concentrations.
r. Jennifer – I thought a goal was to get an action level. We can't get below some human health threshold. I thought we were going back into certain areas to monitor specifically. As opposed to using the whole forebay as the site and comparing that to another reference location. I think that we're deviating. Bradford Island is the site, not the forebay. I think we need to talk about objectives.
s. Kristen K. – I'm in agreement that Bradford Island is the primary source of contamination, with possible foraging at Goose Island. I think that any hot fish caught at Goose Island would probably be from fish feeding by Bradford Island. It's not totally clear to me what

decision we'd be making with an action level. And I like the idea of using reference area fish to help inform an action level.

t. Jennifer – I'm not sure what information you gain from the Reference Area other than an action level, and the forebay can be used for this. Are you monitoring Cascade Locks?
u. Kristen K. – If I wasn't sitting on a data set that was 10 years old I'd say let's just go with the old reference area. It's about making sure we have a good snapshot for apples to apple comparison to background.
v. Bill G. – We're looking for systemic changes over time. The historic dataset shows that the historic Bradford Island and reference area datasets are similar, we'd expect to see that any changes in the forebay and reference area happen in a similar way. If we see something unusual in the forebay, maybe we look at the reference area as the forebay in the spring. I think there is value in going through this process with other contaminants to look for a similar type of relationship for forebay to reference area comparison. One thing that would be hard to explain is if we *are* using the forebay as the reference area, and we see an unusual fish that may be higher. I have concern that bias may occur and all higher level fish automatically get assigned to Bradford Island and lower level fish to the forebay. Must look at all data.
w. Jennifer – Pretty much everything lines up with historical data. The most recent work done in 2011 showed the same pattern for clams and crayfish. I think the data is telling us that the bass *are* picking up stuff around Bradford.
x. Jeremy – I agree with the value of updating a 10 year old data set. I'm not opposed to a reference area, but looking into if it's necessary for new data from there.
y. Kristen K. – I don't think we're looking for a super refined analysis of what is considered background reference concentrations. There are definitely different populations in areas. We're after a good snapshot of what we can confidently identify as associated with the site.
z. Bill G. – I think the data currently points to around 100-200 ug/kg. 100 seems to be a breakpoint for the data set with a few points above that. I think we're in the same ballpark. We need to think through the idea of using the forebay as a reference area.
aa. Chris – Toby is also doing a fish tracking study that should inform fish movement.
bb. Sean – I think there are still risk questions from what fish have been doing for over a decade. Also smallmouth bass are a poor indicator as to if the CSM has changed from past actions. Some fish move and some fish stay. We won't have fillets or whole bodies for analysis from the fish used in the tracking study. A thought is why use more bass from the reference area if more bass could be taken from the Bradford Island area.
cc. Jeremy – Maybe fish tracking data from the forebay would better inform if there's reason to exclude certain bass from the dataset. For the action level, when you do have an action level, you can cite your error tolerances, quantify the variation better, and then determine the number of samples required to meet those criteria. Things fall in place when you have a level that you can make decisions on. I harp on this because we too often get data that we don't know what to do with. Action levels help for making decisions to move sites forward.
dd. Jennifer – If we move forward with statistical comparisons to the reference area, I really think you have 3 populations. Cascade Locks, the rest of the forebay, and Bradford Island exposed fish.
ee. Bill G. asked what the preference was for numbers of fish needed.
ff. Jennifer – We want to make sure we get fish that are representative of the different areas around Bradford Island. I'd suggest to repeat the forebay collection of fish done in the past but with more fish.

gg. Bill G. – We did develop some power curve analysis. One of the things I've found in the past is a database of sites that can be queried within this part of Oregon. It'd be helpful to get more data from these sites.
    i. Todd Hudson – I can talk to the fish advisory department to see if I can get that data.

hh. Chris – This power curve analysis is our first attempt and hasn't yet been emailed to the TAG.

ii. (Kristen K. and Bill G. present power curve slides)

jj. Bill G. – The table shows PCB datasets that were considered. The forebay datasets do not include the very high values above 20,000 (ug/kg). The 2006 dataset was before the dredging action was taken, and it includes some fish in the 1,000's. The combined 2006-2011 datasets are partly to acquire some of the variability that we may see in the future. For the 2 power curves, the blue curve is curve 1 (is the forebay significantly different than the reference), and the green curve is curve 2 (is the forebay significantly different than a threshold of 100). The red dots are if we were to stick with 40 fish, where we would be in terms of power for the two scenarios. This incorporates the points that were in the 100's. We can go through this exercise with a different data set it you'd like.

kk. Jeremy – In relation to the null hypothesis there are a couple options. The data can show we can do a statistical comparison or it will show we have some high concentration samples still showing up. What is the next move if we don't see much difference and it's not significant, or if we do see a difference?

ll. Bill G. – If we see a difference the answer is easier. If we see roughly the same thing than the decision point is to find out where it's coming from. That means we have a source area that's still contributing and we look at other lines of evidence to try and find where the source is coming from. If they are statistically above 100 but say around 500, we still have a site and can compare to reference, but maybe we don't have the same type of source area as we did 10 years ago.

mm. Kristen K. – I agree that it should inform if we still have a high primary/NAPL source.

nn. Jeremy – We have the broad stroke brush for the bass. Passive samplers will hopefully inform of a source or not. The clams seem to be the next step to follow-up with depending on the results of the passive samplers or the bass. I'd think to not go out to collect clams *until* you have the passive sampler results.

oo. Kristen K. – We're doing a robust collection for clams on the northern shoreline this August/September. They feel like a safety net in case the passive sampler data doesn't pan out.

pp. Jeremy – I think crayfish could be good for going for spot checks of certain areas, but not needed for reference area because they're all below background level.

qq. Bill G. – The clam sampling is designed for a statistical analysis. The clam sampling plan should be able to portion out areas of the North shore and also group nearshore versus farshore. If there is still a critical piece missing at that point, we have to go back out to collect sediment at some point anyway, and maybe we could collect additional clams then if needed. Part of it is taking the funding we currently have available and moving that piece forward. For the crayfish, we'll take time to think about that option with focusing our effort in the forebay area.

rr. Jeremy – Was there a discussion of sculpin sampling?

ss. Bill – No.

tt. Jennifer - Crayfish are non-detect if they are not right on the source. The sculpin have wider range.

uu. Bill – We will ponder this.
vv. Jennifer – For placement of the clam sampling areas, there were some locations chosen because they were identified as having previous risk. It looked like there wasn't an effort to go back to those specific areas as part of the plan though, is that correct? I think it's important to occupy previous locations to track concentrations over time.
    i. Bill G. – The intent was to go back to each location. We have locations in each historic sample square. Because of the smaller grids used for randomization, the entire squares weren't included. We can revisit that idea if needed.
    ii. Jennifer – Is there a way to overlay the specific previous locations with the proposed?
    iii. Kristen K. – We'll try to pull that map together.
ww. Bob Dexter – The QAPPs are missing information such as if fish will be collected of a particular size range. There is a variety of conceptual design aspects that aren't in there. I will provide written feedback on some of the missing information.
xx. Jeremy – Compositing crayfish on mass may be an option. Crayfish may be mostly of the same size range, so mass might not be as important.
yy. Bill G. – Mass will vary; it has at other locations sampled. We gave ourselves options for compositing, making compositing in the lab an option.
zz. Jennifer – When will passive sampling results be ready?
    i. Kristen K. – We don't have a firm schedule. We won't have data ready to probably inform the design for the fish sampling study.
    ii. Bill G. – Texas Tech University is analyzing the data now. They were delayed by COVID-19. If we have data before the clam sampling we can use it to inform the clam sampling but it seems unlikely.

3) Action Items:
    a. TAG to provide written comments to QAPPs by 31 July.
    b. USACE to send power curve analysis to TAG
    c. Todd Hudson to look into getting additional data for Oregon sites (to help with power analysis)
    d. USACE to revise clam QAPP map to overlay previous locations with proposed locations.
4) August TAG meeting
    a. Scheduled for 18 August, 10am-12pm. Agenda TBD.